

Materials List for:

Preparation and *In Vitro* Characterization of Dendrimer-based Contrast Agents for Magnetic Resonance Imaging

Serhat Gündüz¹, Tanja Savić¹, Đorđe Toljić¹, Goran Angelovski¹

¹MR Neuroimaging Agents, Max Planck Institute for Biological Cybernetics

Correspondence to: Goran Angelovski at goran.angelovski@tuebingen.mpg.de

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Materials

Name	Company	Catalog Number	Comments
Cyclen	CheMatech	C002	
<i>tert</i> -Butyl bromoacetate	Alfa Aesar	A14917	
<i>N,N</i> -Dimethylformamide	Fluka	40248	
Potassium carbonate	Sigma-Aldrich	209619	
4-(4-Nitrophenyl)butyric acid	Aldrich	335339	
Thionyl chloride	Acros Organics	382662500	Note: Corrosive substance; toxic if inhaled
Bromine	Acros Organics	402841000	Note: causes severe skin burns, fatal if inhaled
Diethyl ether	any source		
Sodium sulphate	Acros Organics	196640010	
Chloroform	VWR Chemicals	22711.29	
<i>tert</i> -Butyl 2,2,2-trichloroacetimidate	Aldrich	364789	Note: flammable substance; irritant to skin and eyes
Boron trifluoride etherate	Acros Organics	174560250	48% BF ₃ . Note: Flammable substance; causes skin burns, fatal if inhaled
Sodium bicarbonate	Acros Organics	424270010	
Ethyl-acetate	any source		For column chromatography
<i>n</i> -Hexane	any source		For column chromatography
Bulb-to-bulb (Kugelrohr) distillation apparatus	Büchi		Model type: Glass oven B-585
Silicagel	Carl Roth GmbH	P090.2	
Methanol	any source		For column chromatography
Dichloromethane	any source		For column chromatography
Ethanol	VWR Chemicals	20821.296	
Ammonia	Acros Organics	428381000	7 N Solution in Methanol
Palladium	Aldrich	643181	15% wet
Hydrogenation apparatus PARR	PARR Instrument Company		
Celite 503	Aldrich	22151	
Sintered glass funnel	any source		
Thiophosgen	Aldrich	115150	Note: irritant to skin; toxic if inhaled
Triethylamine	Alfa Aesar	A12646	
Dichloromethane	Acros Organics	348460010	Extra dry
Magnetic stirrer	any source		

PAMAM G4 Dendrimer	Andrews ChemService	AuCS - 297	10% wt. solution in MeOH
Lipophylic Sephadex LH-20	Sigma	LH20100	
Thin-layer chromatography plates	Merck Millipore	1.05554.0001	
Formic acid	VWR Chemicals	20318.297	
Lophylizer	any source		
Gadolinium(III) chloride hexahydrate	Aldrich	G7532	
Sodium hydroxide	Acros Organics	134070010	
pH meter	any source		
Ethylenediaminetetraacetic acid disodium salt dihydrate	Aldrich	E5134	
Mass spectrometer (ESI)	Agilent		Ion trap SL 1100
Acetate buffer	any source		pH 5.8
Xylenol orange	Aldrich	52097	20 µM in acetate buffer
Hydrophylic Sephadex G-15	GE Healthcare	17-0020-01	
Amicon Ultra-15 Centrifugal Filter Unit	Merck Millipore	UFC900324	Ultracel-3 membrane (MWCO 3000)
Centrifuge	any source		
NMR spectrometer	Bruker		Avance III 300 MHz
Topspin	Bruker		Version 2.1
Combustion analysis instrument	EuroVector SpA		EuroEA 3000 Elemental Analyser
MALDI-ToF MS instrument	Applied Biosystems		Voyager-STR
Deuteriumoxid	Carl Roth GmbH	6672.3	
<i>tert</i> -Butyl alcohol	Carl Roth GmbH	AE16.1	
Vortex mixer	any source		
Norell NMR tubes	Deutero GmbH	507-HP-7	
NMR coaxial tube	Deutero GmbH	coaxialb-5-7	
DLS instrument	Malvern		Zetasizer Nano ZS
0.20 µm PTFE filter	Carl Roth GmbH	KC94.1	
HEPES	Fisher BioReagents	BP310	
Plastic tube vials	any source		
Dotarem	Guerbet		NDC 67684-2000-1
MRI scanner	Bruker		BioSpec 70/30 USR magnet (7 T). Note: potential hazards related to high magnetic fields
RF coil	Bruker		Dual frequency volume coil (RF RES 300 1H/19F 075/040 LIN/LIN TR)
Paravision (software)	Bruker		Version 5.1